the same individual skeleton/'* The typical segment called a vertebra is composed of a centre, a neural and haemal spine, and certain processes which may support diverging appendages to be afterwards spoken of. We find these essential parts throughout the whole back-bone. They are, indeed, in some parts of all anitnals so altered from their typical form, that it is difficult to detect them ; still the skilful anatomist can trace them under all their modifications, and finds it convenient to describe them by the same names. In the tail, we have the processes employed to embrace blood-vessels ; in the body, certain of them are ribs to protect the great vital organs; in the neck, we do not find ribs, because they would injure the free motion of the organ, but we have the rudiments of ribs. Nay, it is now ascertained that the skull itself is made up of parts which can be arranged in a series of segments in which there may be detected the essential parts of the vertebra.

The morphological signification of the limbs of vertebrate animals has likewise been determined by Professor Owen. We have said that the processes of the vertebra might have diverging appendages. In particular, from the haemal or lower arch of the vertebra certain appendages are found to proceed. Owen traces them in a rudimental state in certain vertebrae of the animal frame,and after an extensive induction, he comes to the conclusion that the scapula and caracoid form the haemal arch, and the human hands and arms the diverging appendages of the lucmal arch, belonging to the lowest segment, the occipital segment of the skull. The hind limbs are shewn by a similar process to be costal appendages of a pelvic vertebra. He demonstrates that there are homologous segments appearing in the limbs of finhes, reptiles, birds, mammals, and man, though they have to perform very different functions in each of

these tribes of animals. He exhibits to us the pectoral fin of the dugong, the fore limbs of the mole, the wing of the bat, the leg of the horaci, and the arm of man, and proves that certain essential parts run through them all, and maintain a unity of plan, even when such different functions have to be performed, as that of diving and swimming, burrowing and running, climbing and flying. It *ia* a curious circumstance, that every negment, an4 almost every bo&e present in the human hand and arm, cxint also in the fin of

* Owen on Ilomologws of Vertebrate Skeleton, p. 81.